MONTANA DIABETES PROJECT

QUALITY IMPROVEMENT REPORT

Summer 2012
Vol. V Issue 2

DQCMS Diabetes Quality Care Monitoring System

Report Highlights

Frequent Diabetes Care Visits: Methods, Improved Patient Outcomes, and Cost Savings

The American Diabetes Association recommends scheduling primary care visits for patients with diabetes at least every three months for those who have an elevated A1C or uncontrolled diabetes and every six months for those who have controlled diabetes.[1] However, monthly visits may offer the greatest benefit.

Methods for More Frequent Visits

More frequent visits require time and qualified staff, which can be a challenge to achieve. Two solutions are shared medical appointments (SMAs) and team-based care. Both SMAs and team-based care are key components of the patient centered medical home model. In addition, the Diabetes Quality Care Monitoring System (DQCMS) assists in recording visit dates and sending patient reminders for appointments.

Effective SMAs, also known as group visits, are often one to two hours in duration and may be held monthly to every three months.[2] An example of a six-month diabetes group visit curriculum is available online.[3] The group visit design allows unique opportunities and results in beneficial outcomes:[4,5]

- Patients receive education in a peer-supported setting.
- Providers deliver a consistent message to several patients simultaneously.
- Reimbursement is similar to one-on-one visits.

Statistically significant improvements have been demonstrated in behavioral, psychosocial, and diabetes-related clinical outcomes, including:[4,5]

- access to care
- quality of care
- patient and provider satisfaction
- patient knowledge, self-efficacy, and quality of life
- A1C, blood pressure, cholesterol, and body mass index
- medication adherence

Team-based care is another method to improve care for patients with diabetes. The team provides comprehensive care in a collaborative fashion and consists of two or more health professionals such as a physician, nurse practitioner, physician assistant, medical assistant, pharmacist, behaviorist, diabetes educator, nurse, dietician, and/or exercise physiologist. At least one team member should have training and expertise in diabetes self-management education.

Monthly Visits Accelerate Control of ABCs

Monthly visits result in more rapid control of ABCs (A1C, blood pressure, and cholesterol), fewer emergency and urgent care visits, and fewer referrals to specialists. A study of 30,897 patients with diabetes who had high blood glucose, high blood pressure, and/or high cholesterol and were seen by primary care physicians showed better outcomes from more frequent visits that included lifestyle counseling (Table 1).[6] A face-to-face lifestyle counseling visit was defined as any encounter in which EMR notes mentioned lifestyle counseling and billing data included Current Procedural Terminology codes for evaluation and management. All other instances of lifestyle counseling were considered remote visits. All types of visits (i.e., face-to-face, remote, or a combination) were associated with faster time to treatment target. The model adjusted for several confounders including demographic characteristics, comorbidity, disease severity, primary care physician encounter frequency, medications, and other diabetes-related clinical indicators.

Table 1. Frequency of primary care visits with lifestyle counseling and median time for patients with diabetes to achieve treatment targets.[6]

Treatment Target	Visit Frequency and Time to Target	
Visits	**≥1 per month**	**<1 per six months**
A1C <7.0%*	3.5 months	22.7 months
Blood pressure <130/85 mmHg*	3.7 weeks	5.6 months
LDL cholesterol <100 mg/dL*	3.5 months	24.7 months

(*$P < 0.0001$)

Cost-Effectiveness of Monthly Visits

Few studies in the literature have conducted rigorous cost-effectiveness analyses of monthly visits or group visits; however, two studies reporting cost savings. A cost analysis of monthly visits was reported for 160 Medicaid patients who were seen by a primary care physician-pharmacist team.[7] Despite a greater number of visits, the 40 patients who attended monthly visits had lower management expense with a net annual savings of $5,582 per patient. The cost analysis of a randomized controlled trial of group visits vs. usual care for 186 patients with uncontrolled type 2 diabetes demonstrated an annual savings of $3,065.47 in outpatient charges.[8] Cost savings are likely due to reduced visits with specialists, emergency visits, and hospital admissions.

Conclusions

Engaging patients with diabetes in their diabetes self-management on a frequent basis demonstrates beneficial outcomes for ABCs and cost. Time allocated to frequent, intensive lifestyle counseling and diabetes self-management results in improved outcomes. More cost-effectiveness studies for SMAs and team-based diabetes care are needed.

Diabetes Care Indicators
Montana Physician Offices and Diabetes Education Programs

Figure 1. Diabetes care indicators from primary care practices in Montana participating in the DQCMS project, 2nd Quarter (April to June 2012). N = 30 clinics; 8365 patients.

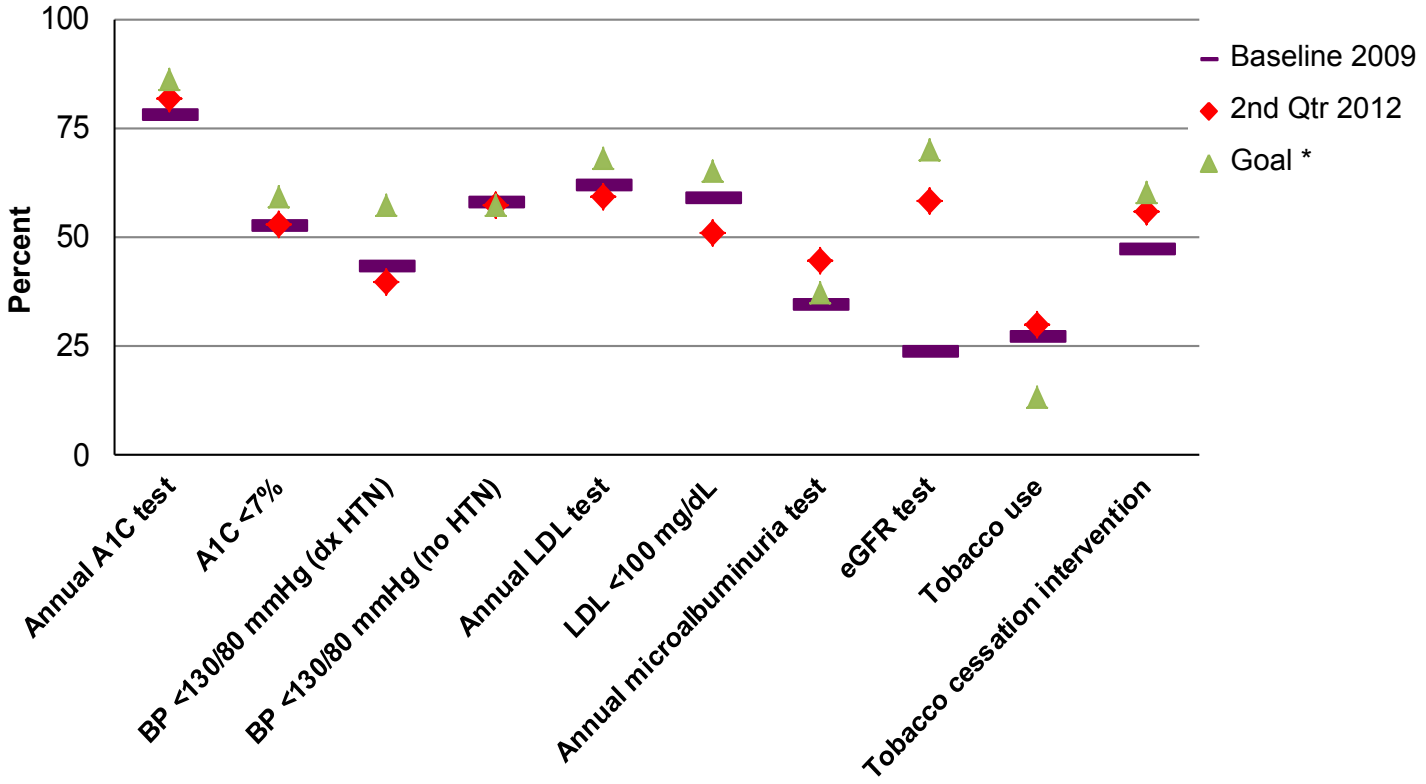
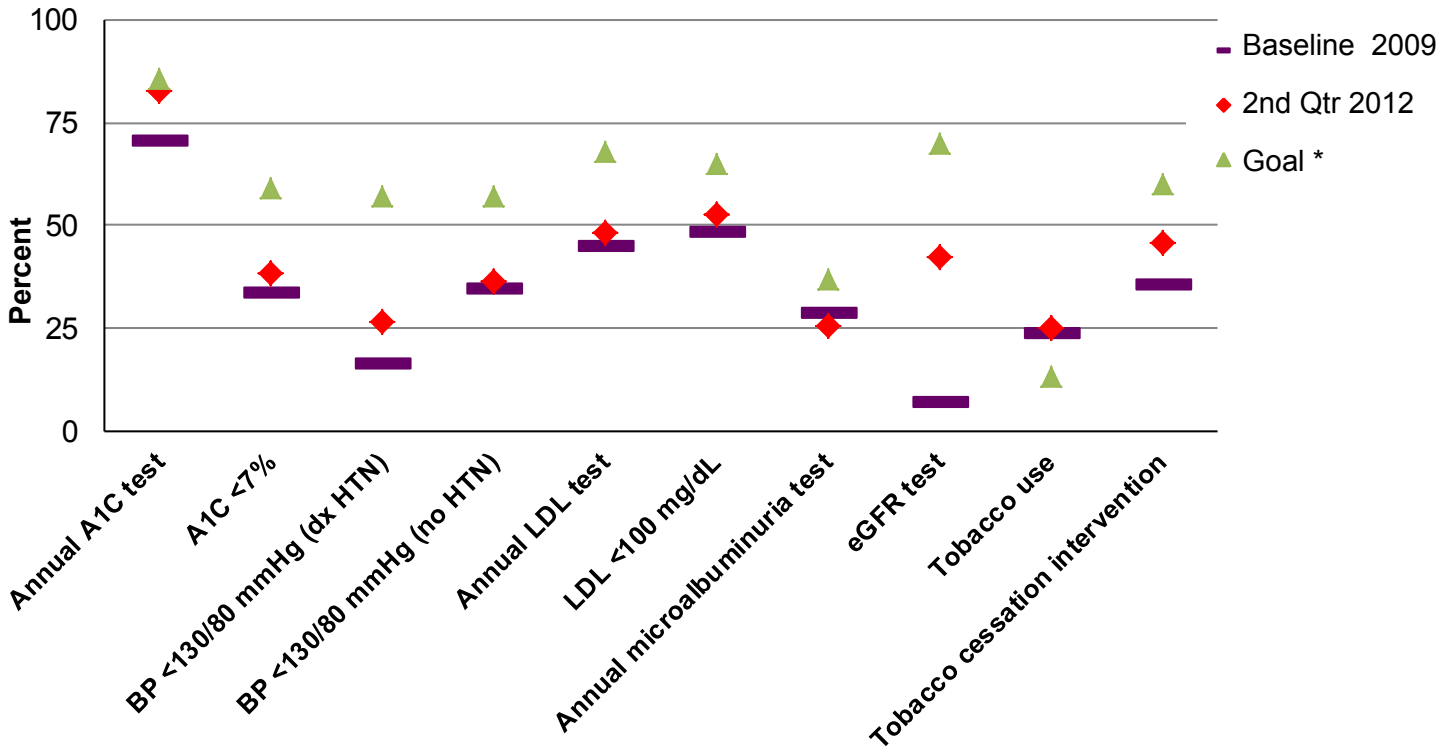


Figure 2. Diabetes care indicators from diabetes education programs in Montana participating in the DQCMS project, 2nd Quarter (April to June 2012). N = 10 sites; 3789 patients.



Data presented here are for adult diabetes patients seen within the last year.
**Montana clinical goals are defined in Vol. IV Issue 2 and based upon Healthy People 2020 or a 10% improvement from baseline.*

Success Story

Gestational Diabetes Mellitus: Screening, Care, and Follow Up

Between 2% and 10% of pregnant women develop gestational diabetes (GDM), making it one of the most common conditions during pregnancy.[9] Women who have a history of GDM have an increased risk of subsequently developing type 2 diabetes. Adequate care, education, and follow up are critical for these women both during pregnancy and after delivery. Two Montana clinical programs, the Bozeman OB/GYN and the Billings Clinic Maternal Fetal Medicine (MFM) Pregnancy Diabetes Program, have together developed a successful system to provide comprehensive care to these patients.

Screening and Diagnosis

Initial screening with a one-hour, 50-gram glucose challenge is performed for every pregnant woman at 28 weeks, or earlier if the woman is at high risk. If a woman does not pass the one-hour screening, then a three-hour, 100-gram oral glucose tolerance test (OGTT) is performed (Table 2). Any woman diagnosed with GDM is immediately referred to the in-office Registered Dietitian/Certified Diabetes Educator (RD/CDE).

Table 2. Diagnosis guidelines for GDM after a 100 gram glucose load. The diagnosis is made when two or more of the four values are elevated.[10]

Time of Test	Blood Glucose Level
Fasting (before glucose test)	≥95 mg/dL
1 hour after glucose test	≥180 mg/dL
2 hours after glucose test	≥155 mg/dL
3 hours after glucose test	≥140 mg/dL

Education and Monitoring

The RD/CDE provides initial education either one-on-one (Bozeman) or via a weekly GDM class (Billings). This session provides patients with a basic understanding of GDM, a food plan, activity recommendations, glucometer training and self-monitoring education to begin checking blood sugars four times daily (fasting and two-hour postprandial). The RD/CDE then follows each GDM patient weekly to assess blood sugar control. This follow up is completed via in-office consult, phone, fax, or email. Additionally, patients requiring insulin are seen regularly by the MFM Perinatologist.

At approximately 36 weeks gestation, all patients with GDM receive thorough education regarding postpartum recommendations and how to reduce their risk of developing type 2 diabetes. Specific postpartum goals are set with each patient in the areas of nutrition, weight, and physical activity. Additionally, education is provided on breastfeeding infants for the first six months of life with emphasis on the impact in preventing or delaying the onset of type 2 diabetes.

Postpartum Follow Up

Diabetes screening is recommended for all women with GDM within six to 12 weeks postpartum.[1] Patients whose GDM was diet-controlled through pregnancy can stop checking blood sugars at delivery, but should have an annual diabetes screening. Patients who require insulin are asked to continue monitoring their blood sugars four times daily during the postpartum period. At two weeks postpartum, a follow up is completed by the RD/CDE. If blood sugars have normalized, then patients are encouraged to be screened annually for diabetes, and lifestyle goals are reinforced. If blood sugars have not normalized, then a referral is made for pre-diabetes or diabetes care. If a patient is unable to obtain finger stick data during the postpartum period, then a two-hour, 75-gram OGTT is performed at six weeks postpartum.

Submitted by: Katie Sonnek, RD, LN
Pregnancy Diabetes Clinic, Department of Maternal-Fetal Medicine, Billings Clinic located at Bozeman OB/GYN, Bozeman, MT

Billings Clinic

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2. Miselli V,Trento M, Porta M. Group care for type 2 diabetes: the Turin experience. Diabetes Spectrum 2012;25:79-84.
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9. Centers for Disease Control and Prevention. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011.
10. American Diabetes Association. Diagnosis and classification of diabetes mellitus. Diabetes Care 2005;28(S1):837-842.

Resources

Congratulations!

Sites with Physician Practice Connections - Patient Centered Medical Home (PPC-PCMH) Recognition:

- Bozeman Deaconess, Bozeman, MT received PPC-PCMH, Level 3 at
  - Bridger Internal Medicine
  - Family Medicine and Pediatrics
  - Hathaway Clinic
  - Internal Medicine Associates
- Grant Creek Family Practice, Missoula, MT received PPC-PCMH, Level 2
- St. Peter's Medical Group, Helena, MT received PPC-PCMH, Level 1 for
  - St. Peter's Medical Group
  - North Montana Clinic

Upcoming Events

Taking Control of Your Diabetes (TCOYD)
Diabetes Conference & Health Fair and CME Conference
September 8, Hilton Garden Inn, Missoula, MT
Visit www.tcoyd.org or www.tcoydcme.org

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American Diabetes Association Tour de Cure Montana
September 15, Missouri Headwaters State Park, Three Forks, MT
Contact Elise Coy at ecoy@diabetes.org or (720) 855-1102 Ext. 7014

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Montana Diabetes Educators Network Meeting
October 18, Holiday Inn, Bozeman, MT
Contact Lisa Ranes at (406) 238-2205

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Montana Quality Improvement Coordinators Meeting
October 18, Holiday Inn, Bozeman, MT
Contact Chris Jacoby at (406) 444-7324

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Annual Montana Diabetes Professional Conference
"New Approaches to Treatment, Management and Education"
October 18 & 19, Holiday Inn, Bozeman, MT
Contact Susan Day at (406) 444-6677

Montana Diabetes Project Staff and Contact Information

Program Manager
Sarah Brokaw, MPH
(406) 444-9154
sbrokaw@mt.gov

Office Manager/Accountant
Susan Day
(406) 444-6677
sday@mt.gov

Quality Improvement Coordinator
Chris Jacoby, BSN, RN
(406) 444-7324
cjacoby@mt.gov

Quality Improvement Coordinator
Elizabeth Mann, RN, CDE, CPT
(406) 682-5453
elsmann2@yahoo.com

Quality Diabetes Education Initiative Coordinator
Marcene Butcher, RD CDE
(406) 535-4797
mbutcher@midrivers.com

Quality Improvement Specialist—Prevention
Diane Arave, BS
(406) 444-0593
darave2@mt.gov

Epidemiologist
vacant

MONTANA DPHHS
Healthy People. Healthy Communities.
Department of Public Health & Human Services

New Resource for Worksites

The Diabetes Prevention and Management "*Train and Takes*" provide training tools for employers to educate their workforce about diabetes prevention and management.

This includes a weekly question and answer for employees, an educational PowerPoint presentation, worksite policy and environment change suggestions, and online resources.

http://montanaworksitewellness.org/resources.shtml

MONTANA DIABETES PROJECT

www.diabetes.mt.gov

- Program goals and activities, State Plan for 2009-2014 and Report on the Burden of Diabetes in Montana
- Diabetes Quality Care Monitoring System Information
- Archived Diabetes Quality Improvement Reports
- Archived Surveillance Reports
- Resources for clinicians, diabetes educators, and schools